

STRONGBOY'S INSTRUCTION RESEARCH

Carried out by Anthony Lundie

I was recently told by Ray Cooke from the H.S.E temporary works team that further testing & investigations upon the Strongboy masonry support products and the instructions upon the Strongboy Ltd website were carried out by the temporary works forum (twf), but when I asked to see the results and photographs of the test I was ignored.

As every task of masonry alterations is totally different it is not possible for only one test and one set of instructions to be adequate for two different products with two different lengths of tongue when Strongboy Ltd suggest they can support 100mm walls, 215mm walls and 300mm cavity walls and everything in between safely and correctly.

Further research is required to ensure the instructions are sufficient for every different task and for every individual product.

PROPPA

An Australian Masonry Support Product.


To avoid deceit this is how the different instructions of two separate products should look upon a website!

PROPPA® masonry wall supports

Instructions for use


Please make sure you select the correct instructions for your model of the Proppa® by clicking on the related image below.

New model released July 2012

 [Proppa Instructions \(New Model\) \(2219 KB\)](#)



Previous model

 [Proppa Instructions \(Old model\) \(117 KB\)](#)



I have put my research and concerns in **ORANGE** to clearly show the radical differences of the safe working loads and eccentricities between the coinciding old Strongboy instructions **GREY** and the new Strongboy instructions in **BLACK** which were updated in Nov 2015 without any warning being given to the end user, retailers or hire associations.

1. Select the height you require for your opening and take out one or two bricks above the joint you wish to work to.

Scrape or grind out the mortar, or remove a brick prior to insertion of the Strongboy in the identified position.

When safely using a traditional Strongboy and supporting a cavity wall correctly, three brick courses are to be removed. The misleading wording increases the risk of the user to overload a Strongboy and induces further risk of collapse.

2. Place the STRONGBOY on top of the prop and adjust to your required working height.

The guidance Issues of the original Strongboy design are addressed within the new Instructions however further testing and research is required upon the new XL Strongboy.

3. For maximum safety the STRONGBOY should be placed where the handle sits against the face of the wall being supported.

There is no equivalent guidance within the new instructions.

4. On normal cavity walls, the maximum distance from the the centre line of the 'acrow' prop, to centre line of the cavity wall or is 215mm (9" inches). Or using the leading edge of the hammer plate as a guide. Measure 150mm to the centre of the cavity.

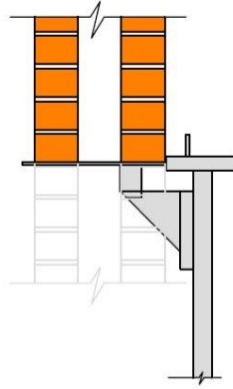
N.B. (Where joints do not line up in a cavity wall you may need to insert a suitable solid wedge between the loading plate and the supported structure.)

The Strongboy can be use on single or double skin walls where each leaf is up to 4 ½" (112mm) thick. If double skin, the maximum cavity is 2" (50mm). Ensure the blade of the Strongboy is fully supporting the second skin.

The maximum 340kg safe working load of the traditional Strongboy is calculated from the maximum eccentricity of 215mm which is the maximum measurement from the centre line of the Acrow prop to the centre line of the cavity wall. Where the eccentricity is more than 215mm the task becomes dangerous as the safe working load is reduced to an unknown quantity.

Within the new instructions there is no mention of the maximum measurement of eccentricity of 215mm. Strangely, all measurements are taken from the end of the oversized tongue, "If" this was a correct way to measure eccentric loads it is actually safer to support a 100mm cavity wall (which is not permitted) than a 50mm cavity wall which is permitted as the measurement from the centre of the Acrow prop is actually a minimum of 25mm less eccentric than a 50mm cavity wall which has an increased eccentricity.

The drawing below is showing the "standard" Strongboy supporting a 100mm cavity wall at 215mm eccentricity from the centre line of the Acrow prop to the centre line of the cavity wall.



Please note; when a plumb Acrow prop is loaded eccentrically by 25mm away from the centre axis the safe working load is reduced by 1700kg. When the 215mm measurement is exceeded the safe working load of an Acrow prop fitted with a Strongboy is unknown and therefore dangerous.

I would like to see the further testing results that prove eccentrically propping over 215mm upon the bendable tongue of both Strongboy products are safe. The new instructions are totally misleading and induce further risk of misuse/overloading.

The N.B instructions are also not within the new instructions and should be added to avoid the risk of collapse through incorrect propping of two different skin heights which is very common especially when the internal skin is block work and external skin is brickwork.

5. On single leaf walls the maximum distance from the centre of the 'acrow' prop to the centre of the wall should be 305mm. (12 inches)

Insert the blade at least at the same depth as the rear of the brick on the leaf of the wall which is intended to be supported. Where possible the Strongboy should be inserted until the tip of the web is nearly touching the wall.

Without further testing the new instructions suggest it is safe to support a 100mm thick wall at a minimum 354mm eccentricity and a 215mm thick wall at a minimum of 295mm which is deceiving to the unaware user and induces further risk of misuse/overloading.

6. Tighten the prop until the loading plate is fully engaged with the brickwork and is load bearing. (DO NOT OVERTIGHTEN)

When an Acrow prop fitted with a Strongboy is over tightened there is risk of the inner tube of the Acrow prop curving as an Acrow prop is designed only for concentric loads and a warning of this should be in place with a correct procedure of what to do if an Acrow prop deflects or curves.

7. For wider hole on stable walls the STRONGBOYS should be positioned and maximum of 900mm apart.

The Insufficient guidance Issues of no7 are addressed within the new Instructions.

8. The maximum safe working height is 3m from finished floor level.
I have no issues with.

9. Maximum safe working load is 340 Kg

Further guidance is required to ensure the user is aware that an Acrow prop is dangerously misused and the safe working load is severely reduced by at least 90%, from 3400Kg down to the maximum 340Kg at 215mm eccentricity and can reduce even further depending on the working height and the size of the Acrow prop used, how plumb and how far the Acrow prop is fitted from the centre line of the wall. I would also like research on the XL Strongboy's safe working load when supporting a 300mm wide cavity wall.

10-12 of the old instructions I have no issues with however the new instructions contain one more sentence that concerns me.

Check that the prop is not working loose on a regular basis – eg continuously while the opening is being made, otherwise daily.

A Strongboy should only be used on a temporary basis. To mention to check daily induces further misuse. Further equipment such as plumb and concentric Acrow props must be used when work is not being carried out.

No Acrow prop guidance is included within the instructions of which I find very strange as there are four sizes that can be used up to the maximum 3m working height and varies the maximum safe working load to an unknown level.

When eccentrically propping with the inner tube of the Acrow prop raised over 50% from the outer tube there is a higher risk of the Acrow prop curving therefore reducing the safe working load considerably and a warning of this should be in place.

No correct or separate procedures are in place for the different tasks of 100mm walls, 9" walls or the different sized cavity walls. There are no maximum opening sizes supplied even though false and misleading information within the instructions were in place for over twenty five years.

Conclusion

The Strongboy and the instructions are designed to deceive the user. And there are also 21 questions to be answered by the H.S.E!

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**The role of the HSE is to;
Provide advice, information and guidance, to raise safety awareness and to
Inspect, investigate and to take enforcement actions.**

In the past, I have been accused of exhausting the H.S.E complaints procedure when I have educated and shown the H.S.E the mistakes which they have made. I have offered my assistance but still the H.S.E only take advice from pompous structural engineers that hide the fact the Strongboy is designed to deceive and to be misused.

The only thing to be exhausted is my trust and faith in the H.S.E as they are not competent enough to have any authority in a sector of the construction industry of which they know very little about then take advice from incompetent structural engineers that do not have the ability to research a temporary support product in a correct, safe or professional manner.

Who police the structural engineers that are at fault, is it the H.S.E when they takes poor advice from Istructe and the Twf?

There is clearly a class system in place;

To please his client, an architect can draw any size opening he wishes within existing masonry with a few lines and a rubber. A structural engineer then provides a method of which he clearly has not researched correctly, the builder then purchases or hires the equipment which is sold by a majority of incompetent retailers with zero masonry alterations knowledge and when the obvious re occurring accidents continue, only the builder/contractor is at fault!

Due to structural engineers and the H.S.E allowing misleading instructions and endorsing to overload the equipment by accepting insufficient testing, they must take full responsibility and foot the bill for any accidents that occurs through misusing the many different tongued prop attachments.

Instructions taken from the Strongboy Ltd website

STRONGBOY MASONRY SUPPORT

Prior to using any Strongboy masonry support, you should identify that this is a suitable method to carry out the intended works. If in doubt, consult a structural engineer.

You must correctly identify all loading that the Strongboys will have to support. The total load may simply be the masonry above the opening, but it will also include loads from a floor and/or a roof that is supported by the wall. Floor loading may need to include any heavy furniture in an upstairs room, a full bath, people walking on the supported floor, etc. Roof loading includes supported timbers/steelwork, roof tiles, loft mounted water tanks and the like.

It is recommended that only one single opening in any one length of wall be created at any given time. You should check that the wall masonry and any floor/roof timbers are in good condition prior to any work being carried out as remedial work may be needed prior to the opening being altered or created.

Strongboy Masonry support is not recommended to be used to provide temporary support to unstable structures. You should obtain competent structural engineering advice if there is any doubt about the condition of the structure or the nature of the loading, or if any unusual loads are suspected.

!!!CAUTION!!! STRONGBOYS ARE HEAVY AND MAY HAVE SOME SHARP EDGES. ALWAYS WEAR PROTECTIVE GLOVES AND APPROPRIATE PROTECTIVE CLOTHING / FOOTWEAR WHEN HANDLING !

Instructions for use:

Mark the wall in the correct position where the Strongboy is to be inserted

Scrape or grind out the mortar, or remove a brick prior to insertion of the Strongboy in the identified position. Always ensure the underside of the brick to be supported is clean and will sit flat on the blade of the Strongboy.

The Strongboy is designed for use with standard telescopic screw props with a 6" x 6" (150 x 150mm) head.

Strongboys should not be used on struts as these have a much smaller head. The prop should only be placed on firm, flat, compacted ground that is capable of supporting the load. A sole board should be placed under each prop - eg 18" x 9" x 1½" (450 x 225 x 36mm)

Hold prop vertically upright with one hand close to where the intended usage is.

With your other hand holding the supporting web, tilt leading edge of Strongboy blade up approximately 30 degrees

IMPORTANT: Slide the rear end of the Strongboy over the top plate of the prop and hook the retaining bar at the rear end of the Strongboy over the prop plate. Ensure the prop plate is fully engaged behind the retaining bar before using!!!

Lower the leading edge of the Strongboy blade until the web bracket is located against the vertical tube of the plate and the blade of the Strongboy is horizontal.

To check the Strongboy is correctly engaged, pull the front edge of the blade down. The Strongboy should not move.

The Strongboy may now be manoeuvred into the correct position for use.

Insert the blade into the mortar space or brick hole until the blade is at least at the same depth as the rear of the brick on the leaf of the wall which is intended to be supported. Where possible the Strongboy should be inserted until the tip of the web is nearly touching the wall.

Ensuring the prop remains completely vertical and in plumb, tighten the collar of the prop until the Strongboy and prop are fully engaged with the wall and do not move. Do not over tighten as that may cause the blade to bend. Hand tight is generally sufficient. Over tightening may damage the brickwork and the prop and Strongboy and may cause the blade to slide out of the brickwork.

When using Strongboys we recommend:

Maximum load bearing capacity of 340 Kgs per unit (750lb)

Maximum safe working height 3 metres from firm base .

The distance between props should be calculated from the assessment of the loading, but in any case, it should not exceed 3ft or 900mm.

Always have the loadings checked and use the correct number of Strongboys for the job. If in doubt, you should obtain competent structural engineering advice.

If the width of the intended opening is greater than 4m we recommend that the props be horizontally laced and diagonal braced together using scaffolding poles and proprietary couplings .

The Strongboy can be used on single or double skin walls where each leaf is up to 4 ½" (112mm) thick. If double skin, the maximum cavity is 2" (50mm). Ensure the blade of the Strongboy is fully supporting the second skin.

Check that the prop is not working loose on a regular basis – eg continuously while the opening is being made, otherwise daily. Arrange the work so that the Strongboys and props are not knocked or displaced. If this could happen then lacing and bracing using scaffold poles and fittings can help prevent accidental movement (standard fittings onto the prop inner tube and 68.3mm fittings onto the outer tube).

Applications

- APPLICATIONS include:-
- Breaking out single or double skinned walls.
- Supporting damaged or uneven brickwork.
- Replacing wall ties.
- Installing R.S.J. or concrete lintels
- Installing new windows / doors or supporting loose or damaged window headers.

Please note Strongboy Ltd can provide advice on the product but does not offer a temporary works design service. Neither can we give specific project related advice. If you need advice on loading or a temporary works design you should consult a structural engineer.

THE OLD INSTRUCTIONS PRIOR TO NOV 2015

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STRONGBOY - INSTRUCTIONS FOR USE

1. Select the height you require for your opening and take out one or two bricks above the joint you wish to work to.
2. Place the STRONGBOY on top of the prop and adjust to your required working height.
3. For maximum safety the STRONGBOY should be placed where the handle sits against the face of the wall being supported.
4. On normal cavity walls, the maximum distance from the the centre line of the 'acrow' prop, to centre line of the cavity wall or is 215mm (9" inches). Or using the leading edge of the hammer plate as a guide. Measure 150mm to the centre of the cavity.
N.B. (Where joints do not line up in a cavity wall you may need to insert a suitable solid wedge between the loading plate and the supported structure.)
5. On single leaf walls the maximum distance from the centre of the 'acrow' prop to the centre of the wall should be 305mm. (12 inches)
6. Tighten the prop until the loading plate is is fully engaged with the brickwork and is load bearing. (DO NOT OVERTIGHTEN)
7. For wider hole on stable walls the STRONGBOYS should be positioned and maximum of 900mm apart. For less stable structures or where there are old mortar joints it may be necessary to position the STRONGBOYS closer together.
8. The maximum safe working height is 3m from finished floor level.
9. Maximum safe working load is 340 Kg
10. The STRONGBOY should only be used where the wall to be supported is adequately braced against lateral forces, e.g. a floor within 500mm of the STRONGBOY.
11. Props must be used in a VERTICAL position on a clean solid and stable floor or substrate capable of supporting the desired weight.
12. Always use STRONGBOYS in a safe and workmanlike manner.

IF IN DOUBT - CONSULT A STRUCTURAL ENGINEER.

STRONGBOY

Designed as a cost effective labour saving device the strongboy will fit any adjustable steel builders ('ACROW') prop with a 6" or 150mm square top plate.

The strongboy is used as an adaption to an Adjustable Steel Prop to provide support to brickwork and other construction support structures.

Due to the Strongboy's robust dynamics, it can be fitted between courses on a double-skin, brick cavity wall from either side. Therefore providing a cost effective, efficient and safe construction component.

Twenty one questions Andy Gay, Ray Cooke, John Underwood and Simon

Longbottom, all from the H.S.E temporary support team can not answer.

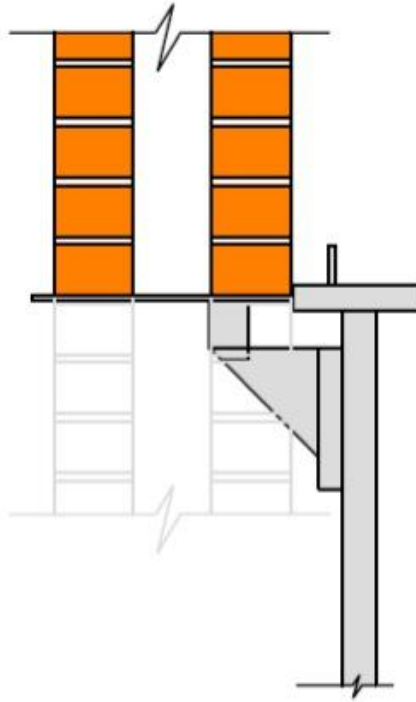
And everyone at IstructE & Tim Lohmann, the chairman of the temporary works forum can not answer.

1:

Can you confirm that misusing an Acrow prop by eccentrically propping a masonry wall from only one side at a minimum measurement of 200mm from the centre of the wall to the middle of an Acrow prop is safe?

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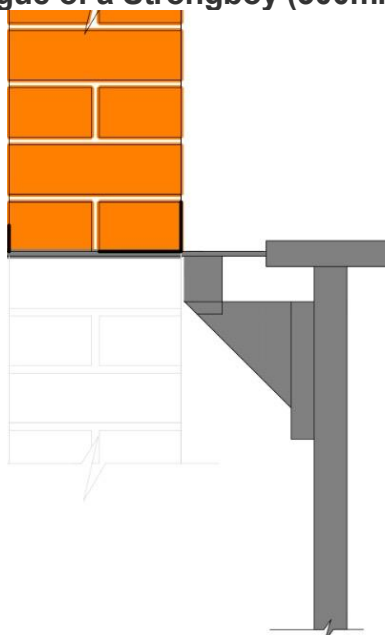
2: Can you confirm that the drawing below is the correct way to support a cavity wall using a Strongboy?



And are you aware that using Strongboy's fitted on the same side and within 215mm of an existing floor height must be misused and the safe working load is reduced to an unknown level?

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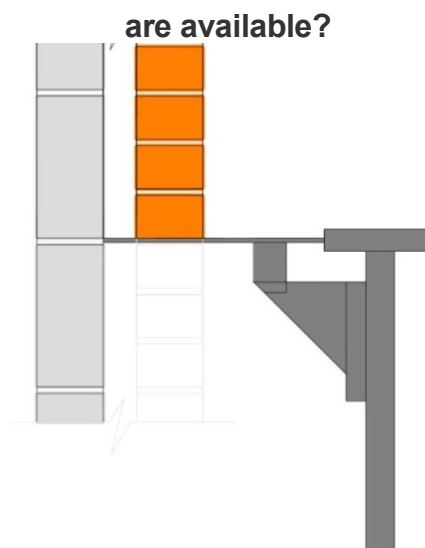
3: Can you confirm it is acceptable to support 9" brickwork or block work on the 215mm tongue of a Strongboy (300mm eccentricity)?



4: Can you confirm that if Strongboy's do not require a maximum opening size or a correct procedure then no other temporary support equipment requires it either?

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5: Can you confirm this is an acceptable method of supporting one side of a cavity wall when the internal skin of masonry impedes and when safer options



6: Can you confirm that you know the many tasks of supporting masonry are totally different and that the majority of tasks require far more fitting work space than the low safe working load Strongboy can safely offer when maintaining its maximum 340kg safe working load and when not dangerously removing the opening down to the full finished level without the permanent support being fitted as this increases the risk of accidental removal of loaded Acrow props during the demolition of the masonry?

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7: Can you confirm that a Strongboy has been fully tested upon a size 1 Acrow prop, a size 2 Acrow prop and not just a size 3 Acrow prop. And as a Strongboy is designed for use with an Acrow prop can you confirm Acrow prop guidance is not required within the instructions of using a Strongboy especially when

Strongboys are mostly sold with size 1 Acrow props through mail order due to their lower weight?

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8: Can you confirm the new instructions of a Strongboy are acceptable and do not require any revision? And can you confirm the market monopoly of the Strongboy has not fixed the typical builders and retailer's mind-set and stopped safer methods and further equipment join the market place?

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9: Can you confirm that the same amount of accidents and near misses would occur if a written warning was in place, such as; "fitting a Strongboy misuses an Acrow prop and the safe working load is reduced by at least 90%"?

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10: Can you confirm that the Strongboy is safe to use when sold without written guidance especially when the internet is still full of the old out of date instructions from unaware retailers that do not know the instructions were changed in November 2015?

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11: I have yet to see a Strongboy being used correctly on site. Can you confirm no further research upon the Strongboy's design is required and please confirm the self certification tests of the Strongboy and of similar products are acceptable?

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12: Can you confirm a Strongboy is designed to reduce masonry damage without being overloaded and is simple and easy to use without compromising the user's safety?

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13: Can you confirm that structural engineers do not specify or recommend the use of Strongboy's when they do not provide the correct fitting space and when the safe working load can vary to an unknown level of which depends on the size of the Acrow prop used, the working height of the Acrow prop, how plumb, how tightly fitted and how far the Acrow prop is fitted from the centre of the wall?

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14: Can you confirm it is acceptable to change the instructions of a temporary support product and not tell anyone of the changes including the retailer's and hire associations?

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15: A Strongboy is designed to reduce masonry damage and to reduce the number of Acrow props from the work area even though it reduces the safe working load of an Acrow prop by at least 90% , can you confirm that using a Strongboy is suitable and safe to reduce internal 1st floor wall damage on small and larger openings?

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16: Can you confirm that the clever marketing of a product with a brand name that implies strength but physically reduces the safe working load of an Acrow prop by 90% with no warning and is sold without guidance and is overloaded with the same amount of ease as the manufacturer says it is to use, has not contributed to the number of accidents and near misses.

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17: Can you confirm that when an Acrow prop is fitted with a Strongboy and is either overloaded, over tightened or removed away from the wall the task becomes dangerous as the safe working load is unknown?

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18: Can you confirm that using a variety of temporary support equipment most suitable for a task is far safer than only using Strongboy's for every task.

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19: Can you confirm that it is in a builder's best interest for a so called competent retailer or hire shop to sell Strongboy's with no written guidance when a variety of temporary support equipment should be used and when the H.S.E are "trying" to change the mind-set of the typical builder.

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20: Can you confirm that the H.S.E has not endorsed the Strongboy by allowing misleading and insufficient guidance for over twenty five years.

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21, Can you confirm that the structural engineers that specify Strongboy's when they are not most suitable have not caused the mind-set of the typical builder and retailer? And can you also confirm that structural engineers and the H.S.E have not helped dangerously ease a difficult task by allowing insufficient guidance and instructions of the Strongboy?

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"Raising new questions and possibilities regarding old problems from a new angle requires creative imagination and marks real advance".

ALBERT EINSTEIN 1879-1955

MY RESEARCH SHOWS HOW A STRONGBOY IS DESIGNED TO DECEIVE AND DESIGNED TO BE MISUSED

The literature and cartoons upon the Strongboy Ltd website are misleading, induces misuse due to false claims and fuels further risk of collapse through overloading!

A

REDUCE DAMAGE

Because the STRONGBOY® Masonry support fits between mortar, you don't have to damage the brickwork above. Simply rake out the mortar or remove a brick beneath the level you wish to work and insert the STRONGBOY® Masonry support. Locate your Prop into position underneath it and you are ready to start.

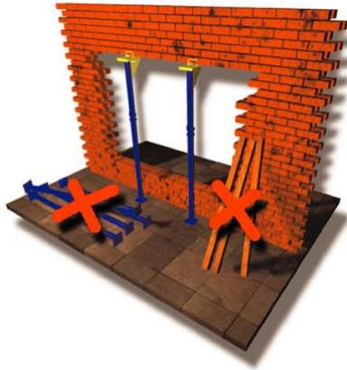


Cartoon A

A cavity wall is propped with the correct method of props and needles but shows an extra hole to deceive and to devalue the author W.G.Nash's correct method of propping. The approximate safe working load of two sets of props and needles is 3,400 Kg. No builder I know props with a needle one and a half brick away from an existing reveal even when no load-point exists. Two holes would be sufficient in this scenario.

B

USE LESS EQUIPMENT



The STRONGBOY® Masonary support will support a double or single skin, brick or block cavity wall, from either the inside or the outside. So you don't need any needles and only half the number of props.

Cartoon B

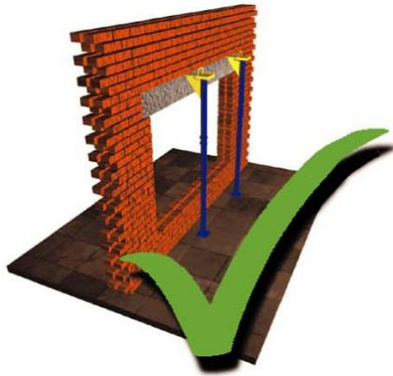
Two Strongboys fitted onto two Acrow's and propping from one side of the wall, please note; with both webs fitted under the wall to be within the 215mm of eccentricity from the centre of the wall to the central axis of the Acrow prop.

Maximum safe working load 680Kg when used with the correct sized Acrow prop. How will the lintel in question be fitted when both webs are impeding the required space to fit the permanent support?

No Acrow props are shown internally which would be required when 1st floor joists rest onto the wall to safely support the different live and static loads they may be carrying, in that instance the equipment would be overloaded.

C

SAVE TIME AND MONEY



The STRONGBOY® Masonry support *effectively* turns a TWO man job into a ONE man job. There are no unnecessary holes to make or needles & props to line up. Plus easy access to the wall from the other side and less repair work, means you.....

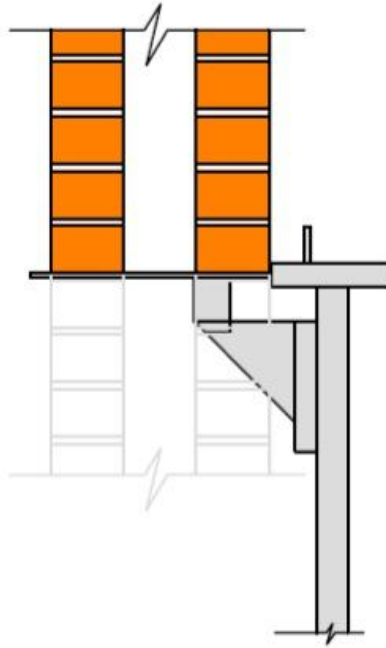
SAVE TIME AND MONEY !!!

Cartoon C

Safety is paramount and must never be compromised to save time and money.

Miraculously showing the lintel already inserted, (effectively by one man) now with the webs of both Strongboy's strangely sitting outside of the wall.

D



To avoid both webs from impeding the fitting area the correct method of using Strongboy's within this scenario would be to raise the tongue of the prop attachment three courses higher than what is shown in cartoon B and fitted as the above drawing D. However when used to support a cavity wall or a 9" wall the attachment doesn't safely support the three courses of brickwork below the fitted tongue and causes the same damage to the existing masonry as the correct method of the props and needles, making the Strongboy unsuitable for the task.

Claims

The manufacturer claims the device is designed not to damage the brickwork but for the device to be used correctly, holes within the masonry are a requirement to safely support a heavy cavity wall or a 9" wall. When no

holes are made the attachment is not within the permitted 215mm and is dangerously misused and overloaded.

Back in 2013 the H.S.E website stated that the main cause of collapse during masonry alterations is overloading equipment due to the lack of awareness of the equipment capacity and underestimating loads.

Due to my own research I believe the main cause of collapse is using this inferior product that claims it reduces brickwork damage, the props and needles is the only method of supporting both skins of a 9" wall or a cavity wall safely upon larger openings.

Recommendations

All the above issues are to be addressed accordingly by the H.S.E and ISTRUCTE

With over 30 years experience within the construction industry I have yet to see a Strongboy used safely and correctly due to a severe lack of correct guidance provided. Yes a Strongboy supports masonry but not safely, it is more luck than any structural engineer's calculations or judgement, our aim is to reduce the same re-occurring accidents that can be prevented through using a variety of temporary support equipment that is most suitable for the task.

**The world is a dangerous place to live; not because
of the people who are evil, but because of the
people who don't do anything about it.**

ALBERT EINSTEIN

1879-1955

KEEP IT SAFE